

Appl. No.: 10/611,522

Amdt. Dated February 28, 2005

Response to Office Action of October 19, 2004

REMARKS/ARGUMENTS

Claims 1-20 are currently pending in the application. Claims 1-20 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 6,768,457 issued to Lindenmeier in view of U.S. Patent No. 6,085,076 issued to Lindsay et al.

Applicants respectfully traverse the rejections set forth above. Applicant has amended claim 1 as follows:

- I. An apparatus for enhancing operation of wireless network environment, comprising
 - a plurality of directional antennas oriented about an axis, wherein the plurality of directional antennas have substantially non-overlapping patterns relative to each other, wherein the peak gains of the plurality of directional antennas are oriented about the axis and offset relative to each other at an angle substantially equal to $360/N$, where N is the number of directional antennas in the plurality of directional antennas; wherein the plurality of directional antennas are each operative to transduce a radio frequency signal and provide an output signal corresponding to the radio frequency signal;
 - a switch operatively connected to the plurality of antennas and operative to switch between the antennas in response to control signals;
 - a detector operative to detect at least one signal attribute of the output signals provided by the directional antennas; and
 - an antenna selection module operative, during receipt of the preamble of a wireless frame, to
 - provide control signals to the switch designating a selected directional antennas in the plurality of directional antennas,
 - evaluate the respective output signals provided by the selected antennas, and
 - select a directional antenna from the plurality of directional antennas for receiving the radio frequency signal associated with the wireless frame.

Applicant has amended independent claims 15 and 20 in a similar manner to claim 1. Applicant has also amended certain dependent claims as set forth above.

Neither Lindenmeier nor Lindsay disclose or suggest the claimed invention. For example, neither Lindenmeier nor Lindsay teach a plurality of directional antennas, oriented about an axis, having substantially non-overlapping antenna patterns. Rather, Lindenmeier discloses a plurality of antennas where the patterns overlap. In addition, neither Lindenmeier nor Lindsay disclose or suggest a plurality of directional antennas wherein the peak gains of the plurality of antennas are offset relative to each other at an angle substantially equal to $360/N$, where N is the number of

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directional antennas in the plurality of directional antennas. Furthermore, Lindenmeier does not appear to disclose or suggest the selection of a directional antenna for receiving the remainder of the wireless frame. In addition, Lindsay discloses a system that selects an antenna based in part on examination of the preamble of a time frame in a TDM system. However, Lindsay does not disclose selection of a directional antenna during receipt of the preamble of a wireless frame. Rather, Lindsay discloses a system where signal attributes detected during the preamble form part of the antenna selection decision for the next TDM frame. For example, antenna selection is also based on evaluation of error checking codes (e.g., CRC), which requires receipt of the entire frame.

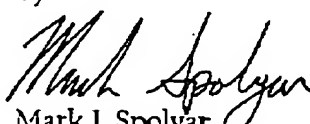
Furthermore, Lindenmeier teaches away from the present invention. Lindenmeier teaches a system that is directed to maximizing the probability of radio frequency coverage over a given area by using multiple, overlapping antenna patterns. The teachings of Lindenmeier teach away from the present invention. Specifically, the present invention minimizes the overlap in antenna patterns by orienting the antennas about an axis and directing the peak gains at angles intended to minimize antenna pattern overlap. The resulting sectorization increases the signal to noise ratio (SNR) of a signal between two wireless nodes, especially under heavy load conditions. Since better SNRs increase the effective data rate, this arrangement increases the capacity of the network. However, the increase in capacity generally occurs at the expense of radio frequency coverage.

In light of the foregoing, Applicant believes that all currently pending claims are presently in condition for allowance. Applicant respectfully requests a timely Notice of Allowance be issued in this case. If the Examiner believes that any further action by Applicant is necessary to place this application in condition for allowance, Applicants request a telephone conference with the undersigned at the telephone number set forth below.

Date: February 28, 2005

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Respectfully Submitted,
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